NRCS and Partners Improve Stream Habitat and Water Quality on Wetland Conservation Easements

By Brooke Smart, NRCS Resource Conservationist

NRCS has invested significant technical and financial resources under the federal Wetlands Reserve Program (WRP), now Wetlands Reserve Easements (WRE), to improve water quality and fish habitat in New Hampshire's streams flowing over private land. NRCS pays 100% for conservation easements with a qualifying wetland restoration component. WRE offers landowners the opportunity to voluntarily restore and protect wetlands on their property and focus on restoring hydrology and plants as well as protecting wildlife and migratory birds. NRCS provides technical and financial support to help landowners with their wetland restoration efforts. Floodplain forests and coastal marshes are among wetlands restored through WRE.

Starting in 2012, NRCS met with Trout Unlimited (TU) and NH Fish and Game partners to screen potential stream restoration projects on over 10,000 acres of permanently protected conservation lands enrolled in WRP. Using GIS information, an initial list of 80 WRP easements containing perennial streams (blue line) was created to help identify potential stream restoration projects. Perennial streams flow nearly all year long and are more likely to support fish species and other aquatic organisms. TU then created a GIS co-occurrence restoration prioritization model to further narrow down the list of possible projects. With agreement from the landowners, TU completed field assessments on selected priority sites in 2013 and the implementation process resulted in 23 projects out of a possible 80 sites statewide covering nearly 10 miles of streams. Rockingham County Conservation District and West Environmental managed and completed the wood-in-stream projects. Baseline documentation of stream conditions were completed in 2014 by TU which included water quality sampling and analysis through the NH Water Resources Research Center/McDowell Lab at UNH. Results have been shared with the NH DES Watershed Management Bureau as part of the Volunteer River Assessment Program to add to the state data set. McDowell Lab at UNH has plans to use the information collected as part of their on-going research about the Lamprey River Watershed as well as further research regarding nutrient retention benefits from in-stream wood.

Corner pool with small diameter wood.

Area to benefit from adding wood.

These wetland restoration projects placed large wood in the stream channel in strategic locations in an attempt to enhance the creation of undercut bank habit, provide cover for brook trout, retain organic materials, and reduce sedimentation downstream. Studies have consistently shown that undercut banks provide excellent habitat for adult brook trout. One of the priority projects is located in Epping, NH along 500 feet of the Rum Brook, a tributary of the Lamprey River. Although Rum Brook is already a very good wild brook trout stream, the addition of large in-stream wood provides much needed cover for brook trout in places where it is lacking. Large wood additions contribute greatly to shading along the channel margins. The stream's width-to-depth ratio is approximately 6-1, providing excellent depth for adult trout. Rum Brook also contains great examples of instream wood; however, distribution throughout the project area is spotty. All restoration efforts attempted to mimic natural wood-in-stream occurrences. The partners will continue to study the results of these projects.